BCC D. F. Smith - St. Louis

November 30, 1961

Mr. Bruce Smith
General Electric Company
Evendale - Building 700
Cincinnati, Ohio

Dear Mr. Smith:

Mr. G. W. McKinney of our Cincinnati office has asked me to forward data and comments concerning the toxicity of our industrial fluids Pydraul F-9 and Pydraul A-200.

Enclosed are two sheets summarizing the animal toxicity data and known human experience with these fluids.

Mr. McKinney mentioned that you were interested specifically in the toxicity of the vapors of these fluids and secondly, in the possible hazards resulting from skin contact.

As indicated in the enclosures, exposures to high concentrations of vapors for a short period do not constitute a serious hazard. At normal temperatures, the vapor pressures of the fluids are such that little vapor is present in the atmosphere. When the fluids are in a system under pressure and at elevated temperatures, economical and efficient use of the fluids dictates minimum leakage be allowed during normal operations. In the event of a system failure such that the fluid is sprayed as a mist, either into the atmosphere or against molten metal or hot surfaces, the toxicity hazard is not serious since the concentrations of the mist, vapors and/or decomposition products would be discomforting to the degree that workmen would not voluntarily expose themselves for sufficiently long periods to experience a serious toxic effect.

In regard to skin contact, the possible reaction following prolonged and repeated skin exposure is more apt to be one where the fluids have acted as a good solvent, much like a common paint thinner or remover. Like many organic liquids, these

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fluids can dissolve the natural oils and fats on the surface of the skin, leading to drying and cracking. For this reason, we recommend that prolonged skin contact be avoided.

Although we have not made a complete chemical analysis of the decomposition products when either fluid is thermally decomposed, the survival of animals in suitable exposure chambers to massive concentrations of vapors, smoke and decomposition products indicates that phosgene is not a major component of such decomposition products. Depending on the conditions of pyrolysis or decomposition, the products include carbon monoxide, carbon dioxide, water vapor and aldehydes, such as one would expect with the decomposition of any complex organic compound. The only significant additional product would be hydrochloric acid. This may add to the acrid and irritating properties of the decomposition products and may be accountable for its discomforting or unpleasant effect on the nose and throat. For practical purposes, this could be considered an advantage in that the irritation limits the amount of exposure that any person would experience.

If I can be of any further assistance, please let me know.

Very truly yours,

Elmer P. Wheeler
Assistant Director
Medical Department

EPW:dh
Enclosures 2

cc Mr. Gordon W. McKinney
Monsanto Chemical Company
2330 Victory Parkway
Cincinnati 6, Ohio

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